

BIOCHEMICAL AND BIOPHYSICAL

Research Communications

EDITORS:

Paul D. Boyer

Francois Gros

I. C. Gunsalus

B. L. Horecker

Boris Magasanik

Frederick C. Neidhardt

Elizabeth F. Neufeld

William D. Phillips

George K. Radda

Esmond E. Snell

Volume 84 • 1978



ACADEMIC PRESS

New York and London

A Subsidiary of Harcourt Brace Jovanovich, Publishers

Copyright © 1978 by Academic Press, Inc.

ALL RIGHTS RESERVED

No part of this publication may be reproduced or transmitted in any form, or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (Operations Staff, P.O. Box 765, Schenectady, New York 12301), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1978 articles are the same as those shown for current articles.

Made in the United States of America

Contents of Volume 84

BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS

CONTENTS

Volume 84, Number 1, September 14, 1978

AUTHOR INDEX, Volume 84, Number 1, September 14, 1978	ii
KOLARI S. BHAT and G. PADMANABAN. Site of Synthesis of Cytochrome P-450 in Liver	1
JOACHIM KOHN and MEIR WILCHEK. A Colorimetric Method for Monitoring Activation of Sepharose by Cyanogen Bromide	7
RICHARD A. LUBEN. Purification of a Lymphokine: Osteoclast Activating Factor from Human Tonsil Lymphocytes	15
TERHO O. ELORANTA and AARNE M. RAINA. Formation of CO ₂ from the Carboxyl Group of S-Adenosylmethionine by Liver Membrane-Associated Enzymes Involves the Demethylation-Transsulphuration Pathway	23
CHARIS GHELIS, MARC TEMPETE-GAILLOURET and JEANNINE M. YON. The Folding of Pancreatic Elastase: Independent Domain Refolding and Inter-Domain Interaction	31
ULF INGO FLÜGGE and HANS WALTER HELDT. Specific Labelling of the Active Site of the Phosphate Translocator in Spinach Chloroplasts by 2,4,6-Trinitrobenzene Sulfonate	37
C. QUAGLIARIELLO, R. GALLERANI, G. GADALETA and C. SACCONI. Primer Directed Poly(A) Synthesis in Rat Liver Mitochondria	45
DAISABURO FUJIMOTO, TAKAHIKO MORIGUCHI, TORAO ISHIDA, and HIROSHI HAYASHI. The Structure of Pyridinoline, a Collagen Crosslink	52
B. R. SINGH and A. DATTA. Glucose Repression of the Inducible Catabolic Pathway for N-Acetylglucosamine in Yeast	58
F. A. CUMAR, B. MAGGIO and R. CAPUTTO. Dopamine Release from Nerve Endings Induced by Polysialogangliosides	65
THOMAS J. KISTENMACHER, CHIAN C. CHIANG, PURUSH CHALILPOYIL, and LUIGI G. MARZILLI. On the Non-Stoichiometry of the Binding of Pt(II) Anti-Neoplastic Agents to Inosine 5'-Monophosphate	70
AKIRA OHASHI and HYOGO SINOHARA. Incorporation of Cytosol δ -Aminolevulinate Synthase of Rat Liver into the Mitochondria <i>in Vitro</i>	76
TORE SKOTLAND, TORBJØRN LJONES, and TORGEIR FLATMARK. Dopamine β -Monooxygenase: Reduced Enzyme Needs Additional Reductant for Completion of the Catalytic Cycle	83
A. J. WILLIAMS and S. E. BARRIE. Temperature Effects on the Kinetics of Calcium Transport by Cardiac Mitochondria	89
K. MORIHARA, H. TSUZUKI and T. OKA. Acyl and Amino Intermediates in Reactions Catalyzed by Thermolysin	95
EDWARD J. LEONARD and ALISON SKEEL. The Action of the Adenosylhomocysteine Hydrolase Inhibitor, 3-Deazaadenosine, on Phagocytic Function of Mouse Macrophages and Human Monocytes	102
H. OBERHAUSER, A. CSORDAS, B. PUSCHENDORF, and H. GRUNICKE. Increase in Initiation Sites for Chromatin Directed RNA Synthesis by Acetylation of Chromosomal Proteins	110
MASASUKE YOSHIDA, NOBUHITO SONE, HAJIME HIRATA, and YASUO KAGAWA. Evidence for Three α Subunits in One Molecule of F ₁ -ATPase from Thermophilic Bacterium PS3	117
LAWRENCE QUE, JR. Extradiol Cleavage of o-Aminophenol by Pyrocatechase	123
RAJ K. GUPTA and JEFFREY L. BENOVIC. Magnetic Resonance Studies of the Interaction of Divalent Metal Cations with 2,3-Bisphosphoglycerate	130
RICHARD VIERSTRA and ALFRED HAUG. The Effect of Al ³⁺ on the Physical Properties of Membrane Lipids in <i>Thermoplasma acidophilum</i>	138
M. SHARMA and J. H. WANG. Evidence against Phosphorylation of ADP by Oleoyl Phosphate Catalyzed by Submitochondrial Particles	144
ANN SMITH and WILLIAM T. MORGAN. Transport of Heme by Hemopexin to the Liver: Evidence for Receptor-Mediated Uptake	151
MICHAEL M. WONG, NANCY P. ROBERTSON, and JOSEPH HORWITZ. Heat Induced Aggregation of the Sodium Dodecyl Sulfate-Solubilized Main Intrinsic Polypeptide Isolated from Bovine Lens Plasma Membrane	158
ANTHONY E. PEGG. Enzymatic Removal of Q ⁶ -Methylguanine from DNA by Mammalian Cell Extracts	166
KAZIMIERZ B. JASTRZEMSKI. Bacteriolytic Enzymes of Vi Phage III Lysate	174
TAKASHI ABIKO, MIHOKO KUMIKAWA, HIROKI HIGUCHI, and HIROSHI SEKINO. Identification and Synthesis of a Heptapeptide in Uremic Fluid	184
MASAAKI TAGUCHI, KATSURA IZUI, and HIROHIKO KATSUKI. Stringent Control of Glycolysis in <i>Escherichia coli</i>	195

P. S. COLEMAN, BEVERLY LAVIETES, RICHARD BORN, and ARNOLD WEG. Cholesterol Enrichment of Normal Mitochondria <i>in Vitro</i> : A Model System with Properties of Hepatoma Mitochondria	202
ANTHONY GIAMBALVO and PAUL DREIZEN. A Thermally Potentiated State for Ac-tomyosin ATPase of Rabbit Skeletal Muscle	208
J. A. STEELE, T. F. UCHYIL, R. D. DURBIN, P. K. BHATNAGAR, and D. H. RICH. The Stimulation of Coupling Factor I ATPase by Tentoxin and Its Analogs	215
JAMES TRAVIS and DAVID JOHNSON. The Carboxy Terminal Sequence of Human Alpha-1-Proteinase Inhibitor	219
JAMES K. STOOPS and SALIH J. WAKIL. The Isolation of the Two Subunits of Yeast Fatty Acid Synthetase	225
PAUL J. BIRCKBICHLER, HENRY A. CARTER, GERALD R. ORR, E. CONWAY, and M. K. PATTERSON, Jr. ϵ -(γ -Glutamyl)Lysine Isopeptide Bonds in Normal and Virus Transformed Human Fibroblasts	232
GÜNTHER F. E. SCHERER and D. JAMES MORRÉ. <i>In Vitro</i> Stimulation by 2,4-Dichlorophenoxyacetic Acid of an ATPase and Inhibition of Phosphatidate Phosphatase of Plant Membranes	238
JACK J. ZAKOWSKI, JOHN W. FORSTROM, RICHARD A. CONDELL, and AL L. TAPPEL. Attachment of Selenocysteine in the Catalytic Site of Glutathione Peroxidase	248
JOHN B. CANNON and JAMES E. ERMAN. The Effect of Phospholipid Vesicles on the Kinetics of Reduction of Cytochrome C	254
JAN-KAN CHEN and MAURICE LISS. Evidence of the Carboxymethylation of Nascent Peptide Chains on Ribosomes	261
MICHAEL WRANN. Methylation Analysis of the Carbohydrate Portion of Fibronection Isolated from Human Plasma	269
ERRATUM. Volume 81, Number 4, April 28, 1978, Michael A. Wosnick and Bradley N. White, "Purification and Nucleoside Composition of a Q*-Containing Aspartic Acid tRNA from <i>Drosophila</i> ," pp. 1131-1138	275

Volume 84, Number 2, September 29, 1978

AUTHOR INDEX, Volume 84, Number 2, September 29, 1978	ii
YASUHARU SASAKI, RYOJI KODAIRA, RYUSHI NOZAWA, and TAKESHI YOKOTA. Inhibitory Effect of 8-Substituted Adenosine Derivatives on Ca^{++} and Modulator Protein-Dependent Phosphodiesterase Activity	277
IAN R. BROWN. Postnatal Appearance of a Short DNA Repeat Length in Neurons of the Cerebral Cortex	285
MURRAY KORC, HARRY SANKARAN, K. Y. WONG, JOHN A. WILLIAMS, and IRA D. GOLDFINE. Insulin Receptors in Isolated Mouse Pancreatic Acini	293
RICHARD S. HIMMELWRIGHT, NANCY C. EICKMAN, and EDWARD I. SOLOMON. Chemical and Spectroscopic Conformation of an Exogenous Ligand Bridge in Half Met Hemocyanin	300
A. AMAR, S. ROTTEM, and S. RAZIN. Disposition of Membrane Proteins as Affected by Changes in the Electrochemical Gradient Across Mycoplasma Membranes	306
YASUKO SAWAI, MIEKO UNNO, and KINJI TSUKADA. Two Ribonuclease H Activities from Rat Liver Nuclei	313
BILLY D. ROBERTS, GEORGE D. BAILEY, CHARLES M. BUESS, and W. ROBERT CARPER. Purification and Characterization of Hepatic Porcine Gluconolactonase	322
BABRUBAHAN SAMAL, N. RAGHUVIERA BALLAL, YONG C. CHOI, and HARRIS BUSCH. Effect of Sarkosyl on the Fidelity of Preribosomal RNA Synthesis in Isolated Nucleoli	328
C. C. FELIX, J. S. HYDE, T. SARNA, and R. C. SEALY. Melanin Photoreactions in Aerated Media: Electron Spin Resonance Evidence for Production of Superoxide and Hydrogen Peroxide	335
C. KIMBALL SHEWMAKER, BENNETT N. COHEN, and THOMAS E. WAGNER. Chemically Induced Gene Activation: Selective Increase in DNAase I Susceptibility in Chromatin Acetylated with Acetyl Adenylate	342
ROBERT C. BAXTER and JOHN R. TURTLE. Regulation of Hepatic Growth Hormone Receptors by Insulin	350
MASAROU MISUMI, TOSHIO NISHIMURA, TOMOYOSHI KOMAI, and NOBUO TANAKA. Interaction of Kanamycin and Related Antibiotics with the Large Subunit of Ribosomes and the Inhibition of Translocation	358
NICOLA DI FERRANTE, PATRICIA V. DONNELLY, DANIELA T. DI FERRANTE, SALVATORE TOMA, and ANTONIO M. GOTTO, JR. Release of Low Density Lipoprotein Receptors from Human Fibroblasts of Hela Cells by Tryptic Digestion	366
CHRISTIAN SCHWABE and SUE J. HARMON. A Comparative Circular Dichroism Study of Relaxin and Insulin	374
MARIA L. BADE and ALFRED STINSON. Activation of Old Cuticle Chitin as a Substrate for Chitinase in the Molt of <i>Manduca</i>	381
HENRY A. SASAME, JAMES R. GILLETTE, and MICHAEL R. BOYD. Effects of Anti-NADPH-Cytochrome c Reductase and Anti-Cytochrome b ₅ Antibodies on the Hepatic and Pulmonary Microsomal Metabolism and Covalent Binding of the Pulmonary Toxin 4-Ipomeanol	389

E. HARADA, S. G. LAYCHOCK, and R. P. RUBIN. Parathyroid Hormone Induced Stimulation of Calcium Uptake by Renal Microsomes	396
STEVEN B. LEICHTER and PHILLIP L. POFFENBARGER. The Effects of Nonsuppressible Insulin-Like Protein (NSIP) on Cyclic Nucleotide Metabolism in Rat Liver	403
THOMAS R. SKOPEK, HOWARD L. LIBER, BRUCE W. PENMAN, and WILLIAM G. THILLY. Isolation of a Human Lymphoblastoid Line Heterozygous at the Thymidine Kinase Locus: Possibility for a Rapid Human Cell Mutation Assay	411
C. J. MICHALSKI. Protein Synthesis during Hormone Stimulation in the Aquatic Fungus, <i>Achlya</i>	417
ANNE RUTKOSKI and J. G. JAWORSKI. Fatty Acid Synthetase from Chloroplasts of Soybean Cotyledons: ACP Activation and CoA Inhibition	428
V. FAVAUDON, C. FERRADINI, J. PUCHEAULT, L. GILLES, and J. LE GALL. Kinetics of Reduction of the Cytochrome C ₃ from <i>Desulfovibrio vulgaris</i>	435
CATHERINE MOLINIER-JUMEL, BERNARD MALFOY, JEAN A. REYNAUD, and GENEVIEVE AUBEL-SADRON. Electrochemical Study of DNA-Anthracyclines Interaction	441
J. L. BEAR, J. G. ZALITIS, and A. G. MACKINLAY. Inhibition of Mammary Gland Cyclic AMP-Dependent Protein Kinase by Arginine-Rich Histones	450
J. M. HAMLYN and T. DUFFY. Direct Stimulation of Human Erythrocyte Membrane (Na ⁺ + K ⁺)-Mg ATPase Activity <i>in Vitro</i> by Physiological Concentrations of <i>d</i> -Aldosterone	458
POONAM V. RAO and DONALD L. KEISTER. Energy-Linked Reactions in Photosynthetic Bacteria. X. Solubilization of the Membrane-Bound Energy-Linked Inorganic Pyrophosphatase of <i>Rhodospirillum rubrum</i>	465
CHARLES G. WINTER. Tryptic Inactivation of the Ouabain Binding Site of Canine Kidney Na ⁺ , K ⁺ -ATPase and Its Effect on Catalytic Function	474
M. A. MATLIB, D. WILSON, W. ROUSLIN, G. KRAFT, P. BERNER, and A. SCHWARTZ. On the Existence of Two Populations of Mitochondria in a Single Organ. Respiration, Calcium Transport and Enzyme Activities	482
S. J. GARTE and S. BELMAN. Effects of Multiple Phorbol Myristate Acetate Treatments on Cyclic Nucleotide Levels in Mouse Epidermis	489
R. F. DOOLITTLE, B. A. COTTRELL, D. STRONG, and K. W. K. WATT. Sequence of Amino Acids Comprising the Single Intra-Chain Disulfide Loop in the α -Chain of Human Fibrinogen	495
MASAHITO FUKUNAGA and K. LEMONE YIELDING. Propidium: Induction of Petites and Recovery from Ethidium Mutagenesis in <i>Saccharomyces cerevisiae</i>	501
CHRISTIANE GEBHARDT, DIETER MECKE, and HANS BISSWANGER. Dihydrolipoamide Transacetylase from <i>Escherichia coli</i> : Evidence for Internal Gene Duplication	508
G. A. KOCHETOV and O. N. SOLOVIEVA. Active Subunits of Transketolase from Baker's Yeast	515
SUSANNA YU. TUMANOVA, SERGEJ A. BADJINYAN, and ROBERT M. NALBANDYAN. Resistance of Planar Bilayers of Gangliosides	520
JON R. KATZE. Q-Factor: A Serum Component Required for the Appearance of Nucleoside Q in tRNA in Tissue Culture	527

Volume 84, Number 3, October 16, 1978

AUTHOR INDEX, Volume 84, Number 3, October 16, 1978	ii
FARZIN FARZANEH and COLIN K. PEARSON. Poly(Adenosine Diphosphate Ribose) Synthesis by Isolated Nuclei of <i>Xenopus laevis</i> Embryos: <i>In Vitro</i> Elongation of <i>in Vivo</i> Synthesized Chains	537
RAJAN GEORGE, A. S. MENON, and T. RAMASARMA. Desensitization to ATP-Mg Inhibition of 3-Hydroxy-3-Methylglutaryl CoA Reductase by Heat Treatment of Microsomes	544
BEN-AMI SELA and DALIA GURARI-ROTMAN. Interferon Abrogates the Arrest of DNA Synthesis in Heterologous Thymocytes Treated with Lectins	550
YOICHIRO IWAKURA, SHIN YONEHARA, and YOSHIMI KAWADE. Presence of a Common Structure in the Two Molecular Species of Mouse L Cell Interferon	557
KLAUS SCHNEIDER and HANS G. SCHLEGEL. Identification and Quantitative Determination of the Flavin Component of Soluble Hydrogenase from <i>Alcaligenes eutrophus</i>	564
AKE ELHAMMER, GUSTAV DALLNER, and TSUNEO OMURA. Glycosylation of Rat Liver Cytochrome b ₅ on the Ribosomal Level	572
D. P. STAHLY, D. W. DINGMAN, L. A. BULLA, JR., and A. I. ARONSON. Possible Origin and Function of the Parasporal Crystals in <i>Bacillus thuringiensis</i>	581
H. PAUL MELOCHE, CLAIRE T. MONTI, and RUTH A. HOGUE-ANGELETTI. Identification of the Bromopyruvate-Sensitive Glutamate within the Active Site of 2-Keto-3-Deoxygluconate-6-P Aldolase	589
JAMES MICHAEL ANDERSON and MILTON J. CORMIER. Calcium-Dependent Regulator of NAD Kinase in Higher Plants	595
WILLIAM T. BLUE and ARTHUR WEISSBACH. Detection of a DNA Polymerase β Stimulating Protein in HeLa Cell Nuclear Extracts	603
ANTHONY W. SEGAL and STEPHEN B. COADE. Kinetics of Oxygen Consumption by Phagocytosing Human Neutrophils	611

J. MONJARDINO and A. JAMES. <i>In Vitro</i> Transcription of Polyoma DNA	618
JUAN BORDAS, JOHN WOODHEAD-GALLOWAY, and DAVID W. L. HUKINS. Energy Dispersive X-Ray Diffraction by Collagen Fibrils in Costal Cartilage Using Synchrotron Radiation	627
S. ANAND KUMAR, THAISA BEACH, and HERBERT W. DICKERMAN. Effect of Chaotropic Anions on the Rate of Dissociation of Estradiol-Receptor Protein Complexes of Mouse Uterine Cytosol	631
K. W. BUCK. Semi-Conservative Replication of Double-Stranded RNA by a Virion-Associated RNA Polymerase	639
M. J. BARNES, L. F. MORTON, and C. I. LEVENE. Synthesis of Interstitial Collagens by Pig Aortic Endothelial Cells in Culture	646
AKIRA MATSUDA, YUSUKE WATAYA, and DANIEL V. SANTI. 5-Nitro-2'-Deoxyuridylylate: A Mechanism-Based Inhibitor of Thymidylate Synthetase	654
THOMAS JOOS and F. ALFRED ANDERER. Short-Time Phosphorylation of Plasma Membrane Proteins by Endogenous Kinases	660
OM P. BAHL, LEOPOLD MARZ, and MICHAEL J. KESSLER. Isolation and Characterization of <i>N</i> - and <i>O</i> -Glycosidic Carbohydrate Units of Human Chorionic Gonadotropin	667
K.-H. ADAM, O. R. KAADEN, and K. STROHMAIER. Isolation of Immunizing Cyanogen Bromide-Peptides of Foot-and-Mouth Disease Virus	677
G. R. MUNSKE, J. A. MAGNUSON, and H. KRAKAUER. A Conformational Change in Concanavalin A Detected by a Calorimetric Study of the Binding of Methyl α -D-Mannopyranoside	684
NORBERTO A. GUZMAN, PETER N. GRAVES, and DARWIN J. PROCKOP. Addition of Mannose to Both the Amino- and Carboxy-Terminal Propeptides of Type II Procollagen Occurs without Formation of a Triple Helix	691
V. BRYAN LAWLIS, GEOFFREY L. R. GORDON, and BRUCE A. McFADDEN. Regulation of Activation of Ribulose Bisphosphate Carboxylase from <i>Pseudomonas oxalaticus</i>	699
P. KREMERS, F. PASLEAU, and J. E. GIELEN. Is Steroid-16 α -Hydroxylase Supported by More than One Monooxygenase?	706
PIERRE FOURCROY. Advantages of Potassium Bromide Gradients for Isopycnic Centrifugation of Proteins	713
WOLFRAM VATER, HUBERT MULLER, and EBERHARD UNGER. Inhibition of Microtubule Formation by DNA	721
JACQUELINE LEVILLIERS, FRANCOISE LECOT, and JACQUES PAIRAULT. Modulation by Substrate and Cations of Guanylate Cyclase Activity in Detergent-Dispersed Plasma Membranes from Rat Adipocytes	727
E. J. SHIMSHICK and R. R. HEBERT. Adsorption of Rhizobia to Cereal Roots	736
W. J. BURROWS. Incorporation of ^3H -Adenine into Free Cytokinins by Cytokinin-Autonomous Tobacco Callus Tissue	743
PAUL E. McMAHILL and HOWARD S. MASON. Structural States of the Binuclear Copper Cluster of <i>Cancer magister</i> Methemocyanin	749
HIROTO OKAYAMA and OSAMU HAYAISHI. ADP-Ribosylation of Nuclear Protein A24	755
JOSEPH SCHUH, ABRAHAM NOVOGRODSKY, and RUDY H. HASCHEMEYER. Inhibition of Lymphocyte Mitogenesis by Autoxidized Low-Density Lipoprotein	763
EVELYNE JOSEPH, ANTOINE DANCHIN, and AGNES ULLMANN. Modulation of the Lactose Operon mRNA Turnover by Inhibitors of Dihydrofolate Reductase	769
MICHINORI IMAZU, TEIJI IMAOKA, HIROFUMI USUI, and MASAO TAKEDA. Dissociation and Reassociation of a Pig Heart Phosphoprotein Phosphatase	777
IRA L. GOLDKNOPE, MARTHA E. FRENCH, YERACH DASKAL, and HARRIS BUSCH. A Reciprocal Relationship between Contents of Free Ubiquitin and Protein A24, Its Conjugate with Histone 2A, in Chromatin Fractions Obtained by the DNase II, Mg^{++} Procedure	786
CARL P. DIETRICH and HUGO A. ARMELIN. Sulfated Mucopolysaccharides from Normal Swiss 3T3 Cell Line and Its Tumorigenic Mutant ST1: Possible Role of Chondroitin Sulfates in Neoplastic Transformation	794
THOMAS R. TRITTON, SANDRA A. MURPHREE, and ALAN C. SARTORELLI. Adriamycin: A Proposal on the Specificity of Drug Action	802
RICHARD J. DOUTHART and STANLEY G. BURGETT. Enzymatic Degradation by the Sera of Various Animal Species of Penicillium Chrysogenum Mycophage Double-Stranded RNA	809
GUNTHER MOMSEN. Firefly Luciferase Reacts with P^i , P^o -Di(adenosine-5'-)pentaphosphate and Adenosine-5'-Tetraphosphate	816
GEORGE J. SCHROEPFER, JR., EDWARD J. PARISH, GARY L. GILLILAND, MARCIA E. NEWCOMER, LAURA L. SOMMERVILLE, FLORANTE A. QUIOCHO, and ANDREW A. KANDUTSCH. 7 α ,15 β -Dichloro-5 α -cholest-8(14)-en-3 β -ol, A Novel Inhibitor of Sterol Biosynthesis in Animal Cells	823

VINAYAK N. DAMLE, MARGARET McLAUGHLIN, and ARTHUR KARLIN. Bromoacetylcholine as an Affinity Label of the Acetylcholine Receptor from <i>Torpedo californica</i>	845
ARMIN KURTZ and CHRISTIAN BAUER. The Oxygen Affinity of Hemoglobin β^{SH} Chains Is Concentration Dependent.	852
ANA MARIA GONZALEZ, MILENA SOCHOR, JOHN S. HOTHERSALL, and PATRICIA McLEAN. Effect of Experimental Diabetes on the Activity of Hexokinase in Rat Lens: An Example of Glucose Overutilization in Diabetes	858
A. S. BHAGWAT and P. V. SANE. Evidence for the Involvement of Superoxide Anions in the Oxygenase Reaction of Ribulose-1,5-Diphosphate Carboxylase	865
H. SCHERRER, N. G. SEIDAH, S. BENJANNET, P. CRINE, M. LIS, and M. CHRETIEN. Biosynthesis of a Ubiquitin-Related Peptide in Rat Brain and in Human and Mouse Pituitary Tumors	874
STEPHAN L. GINELL and R. PARTHASARATHY. Conformation of N^2 -Methylguanosine, a Modified Nucleoside of tRNA	886
STEPHEN D. MCCURRY, NIGEL P. HALL, JOHN PIERCE, CHRISTIAN PAECH, and N. E. TOLBERT. Ribulose-1,5-Bisphosphate Carboxylase/Oxygenase from Parsley	895
R. E. SLOVACEK and G. HIND. Flash Spectroscopic Studies of Cyclic Electron Flow in Intact Chloroplast	901
CHIHARU TOHYAMA and ZAHIR A. SHAIKH. Cross-Reactivity of Metallothioneins from Different Origins with Rabbit Anti-Rat Hepatic Metallothionein Antibody	907
BORJE NORLING, BENGT GLIMELIUS, BENGT WESTERMARK, and AKE WASTESON. A Chondroitin Sulphate Proteoglycan from Human Cultured Glial Cells Aggregates with Hyaluronic Acid	914
MARTIN W. BANSCHBACH, ALBERT G. KARAM, PAULA K. LOVE, and BETTINA C. HILMAN. Cystic Fibrosis Serum Promotes [^{45}Ca] Uptake by Normal Human Leukocytes	922
SATOSHI NASU, FRANK D. WICKS, SHIGEKI SAKAKIBARA, and ROBERT K. GHOLSON. Synthesis of Quinolate from D-Aspartate in the Mammalian Liver- <i>Escherichia coli</i> Quinolate Synthetase System	928
ROBERT W. MOORE and STEVEN D. AUST. Purification and Structural Characterization of Polybrominated Biphenyl Congeners	936
R. VILA, A. LLOBELL, J. A. BARCENA, and A. PANEQUE. Nitrate Reductase from <i>Azotobacter chroococcum</i> . Inactivation by Oxidizing Agents and Reactivation with Dithioerythritol	943
TAPATI CHATTERJEE and ASOKE G. DATTA. Effect of Glucagon Administration on Mice Liver Fructose-1,6-Bisphosphatase	950
TIMOTHY L. KARR and DANIEL L. PURICH. Examination of Tubulin-Nucleotide Interactions by Protein Fluorescence Quenching Measurements	957
GEORGE H. JONES. Sensitivity of Transcription by Purified <i>Streptomyces antibioticus</i> RNA Polymerase to Actinomycin	962
R. A. DAY, G. BHAT, L. C. LIN, A. C. ROTH, V. H. MULIMANI, and R. C. KRUEGER. Circular Dichroic Probes for Aspects of Chromatin Structure: Aromatic Polycationic Ionen Probes	969
SHIGEO TOMIOKA and MICHIO MATSUHASHI. Purification of Penicillin-Insensitive DD-Endopeptidase, a New Cell Wall Peptidoglycan-Hydrolyzing Enzyme in <i>Escherichia coli</i> , and Its Inhibition by Deoxyribonucleic Acids	978
JUNE B. SANTON and WENDELL M. STANLEY, JR. Stability of Protein Synthesis Initiation Complexes in the Presence of Edeine	985
WUNG-WAI TSO and MAN-YIN WONG. Chemotaxis: Not a Prerequisite for Plasmodia Coalescence in <i>Physarum polycephalum</i>	993
KEITH BARRETT-BEE and JOYCE LEES. The Nature of the β -Adrenoceptor Involved in the Inhibition of Antigen-Induced Histamine Release	998
JOHN P. WIEBE. Isolated Sertoli Cells from Immature Rats Produce 20 α -Hydroxy-Pregn-4-en-3-One from Progesterone and 3β ,20 α -Dihydroxy-5 α -Pregnane from Pregnenolone	1003
DONALD J. HANAHAN, RICHARD D. TAVERNA, DONNA D. FLYNN, and JANICE E. EKHOLM. The Interaction of $\text{Ca}^{2+}/\text{Mg}^{2+}$ ATPase Activator Protein and Ca^{2+} with Human Erythrocyte Membranes	1009
PETER A. LAGOSKY and F. N. CHANG. The Extraction of Guanosine 5'-Diphosphate, 3'-Diphosphate (ppGpp) from <i>Escherichia coli</i> Using Low pH Reagents: A Reevaluation	1016
KENICHI YOSHIKAWA, HIROSHI TERADA, and YOSHIMASA KYOGOKU. Two Kinds of Unfrozen Water in Mitochondrial Suspension Detected by ^1H Magnetic Resonance	1025
H. CRAMER, R. HAMMERS, P. MAIER, and H. SCHINDLER. Cyclic 3',5'-Adenosine Monophosphate in the Choroid Plexus: Stimulation by Cholera Toxin	1031
Y. NAKAGAWA, E. T. KAISER, and F. L. COE. Isolation and Characterization of Calcium Oxalate Crystal Growth Inhibitors from Human Urine	1038
SANDOR BAJUSZ, ANDRAS PATTHY, AGNES KENESSEY, LASZLO GRAF, JOZSEF I. SZEKELY, and ANDRAS Z. RONAI. Is There Correlation between Analgesic Potency and Biodegradation of Enkephalin Analogs?	1045
MATHIAS P. MERTES, CHARLES T.-C. CHANG, ERIK DE CLERCQ, GUANG-FU HUANG, AND PAUL F. TORRENCE. 5-Nitro-2'-Deoxyuridine 5'-Monophosphate Is a Potent Irreversible Inhibitor of <i>Lactobacillus caesi</i> Thymidylate Synthetase	1054
HIERONIM JAKUBOWSKI and ANDRZEJ GURANOWSKI. Adenosylhomocysteinase: Adenosine Complex	1060
ROBERT H. ECKEL, WILFRED Y. FUJIMOTO, and JOHN D. BRUNZELL. Insulin Regulation of Lipoprotein Lipase in Cultured 3T3-L1 Cells	1069
ANDRE VANDERMEERS, PATRICK ROBBERECHT, MARIE-CLAIRE VANDERMEERS-PIRET, JEAN RATHE, and JEAN CHRISTOPHE. Specific Binding of the Calcium-Dependent Regulator Protein to Brain Membranes from the Guinea Pig	1076
ROBERT BENVENISTE, K. V. SPEEG, JR., ALLEN LONG, and DAVID RABINOWITZ. Concanavalin-A Stimulates Human Chorionic Gonadotropin (hCG) and hCG-Alpha Secretion by Human Choriocarcinoma Cells	1082

I. HANSSENS and F. H. VAN CAUWELAERT. Shielding of Phospholipid Monolayers from Phospholipase C Hydrolysis by α -Lactalbumin Adsorption	1088
C. OLIVER, P. GILLIOZ, P. GIRAUD, and B. CONTE-DEVOLX. Degradation of TRH and Its Analogues by Rat Serum and Brain Homogenate.	1097
GERHARD FURSTENBERGER and FRIEDRICH MARKS. Indomethacin Inhibition of Cell Proliferation Induced by the Phorbol ester TPA Is Reversed by Prostaglandin E ₂ in Mouse Epidermis <i>in Vivo</i>	1103
JAMES E. GREENWALD, LAN K. WONG, MOHAN RAO, J. R. BIANCHINE, and RAO V. PANGANAMALA. A Study of Three Vasodilating Agents as Selective Inhibitors of Thromboxane A ₂ Biosynthesis	1112
YVES COMBARNOUS and ELAINE NABEDRYK-VIALA. Porcine Lutropin: A Study of the Association of Its Subunits by Hydrogen-Deuterium Exchange	1119
HAYWOOD BLUM, J. C. SALERNO, and MICHAEL A. CUSANOVICH. Evidence for Antiferromagnetic Exchange Coupling in the Tetranuclear High Potential Iron-Sulfur Protein of <i>Rhodopseudomonas gelatinosa</i>	1125
RICKY R. HIRSCHHORN and RICHARD ABRAMS. Synthesis of Herpes Simplex Virus DNA in a Soluble Nuclear Extract	1129
KLAUS HOFMANN, JOON JA KIM, and FRANCES M. FINN. The Role of Protein Kinases in ACTH-Stimulated Steroidogenesis	1136
JIANN-SHIN CHEN and D. KAY BLANCHARD. Isolation and Properties of a Unidirectional H ₂ -Oxidizing Hydrogenase from the Strictly Anaerobic N ₂ -Fixing Bacterium <i>Clostridium pasteurianum</i> W5	1144
ARNOLD A. SWANSON, BARBARA ALBERS-JACKSON, and J. KEN McDONALD. Mammalian Lens Dipeptidyl Aminopeptidase III	1151
ERRATUM. Volume 83, Number 2, July 28, 1978, John R. Babson and Donald J. Reed, "Inactivation of Glutathione Reductase by 2-Chloroethyl Nitrosourea-Derived Isocyanates," pp. 754-762	1160
AUTHOR INDEX, Volume 84	1161